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Mineral Fuel and Oil Trade between India and Singapore: Trends and Issues

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Bilateral merchandise trade between India and Singapore is growing at a robust pace. During the period 2003 to 2007, bilateral trade grew at an annual average rate of 32.5 percent. There are several factors driving this rapid increase in trade. These include a pick-up in the trend rate of growth of India's gross domestic product and high import demand from a buoyant Indian industry, deeper penetration of Indian exports in Singapore market² and an enabling trade framework provided by the Comprehensive Economic Cooperation Agreement (CECA).

One of the key features of India-Singapore trade is the growing importance of mineral fuel and oil products. These products have been an important driver of the current bilateral trade. Cross-border movement of these products has gone up sharply during the last five years that correspond to a period of high growth for the Indian economy. The commodity dynamics of bilateral trade suggest that the importance of mineral fuel and oil products is likely to increase further in future. In particular, specific high-export categories like refined petroleum products are expected to play vital roles in bilateral trade.

In spite of the rising significance of mineral fuel and oil products, there has hardly been any structured attempt on both sides to diagnose and examine the key trends in such trade. There is hardly any research literature that highlights the main commodities figuring in mineral fuel and oil trade as well as the interplay of market forces in generating and sustaining such trade. Meaningful research on the subject has also been constrained by lack of adequate disaggregated data on trade flows.

This paper attempts to identify the main trends in bilateral mineral fuel and oil trade between India and Singapore. It focuses on the last five years (2003-2007) with the specific objective of identifying the leading commodities being traded on either side at a disaggregated level and the market determinants of such trade. The paper has an empirical approach and employs statistical methods for arriving at the main conclusions. The analysis is based on detailed

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² Singapore is now India's 4th largest export market.

trade records (at 8-digit level of commodity classification) of the International Enterprise (IE) Singapore for the period 2003-2007.

The paper is divided into five sections for analytical convenience. Section 1 captures the main snapshots of bilateral trade in mineral fuel and oil products. Sections 2 and 3 focus on Singapore's mineral fuel and oil exports and re-exports to India. Section 4 studies India's mineral fuel and oil exports to Singapore. Finally section 5 analyses and concludes the paper.

I. Salient Features of Bilateral Mineral Fuel and Oil Trade

Mineral fuel and oil products include a variety of mineral fuels, mineral oils, refined products of petroleum oil, oil distillates, bituminous substances and mineral waxes.³ The current share of these products⁴ in total bilateral trade between India and Singapore is around 28 percent (Table 1). In recent years, the share of mineral fuel and oil products in goods trade has more than doubled (Table 1). Indeed, the rate of growth in bilateral trade in these products has been much faster than the rate of growth in total bilateral trade. This is clear from the fact that during 2003-2007, mineral fuel and oil trade grew at an annual average rate of 72.8 percent, which was more than double of the comparable growth rate of 32.5 percent for total trade. However, this growth is also attributable to the rapid increase in prices of oil products, both crude and refined. Thus, the sharp growth in trade of mineral and oil products is an outcome of both volume as well as value-driven increases.

Table 1: Overall trade and trade in mineral fuel and oil products (S\$ million)

	2003	2004	2005	2006	2007
Trade in mineral fuel and oil products	891.6	2,223.8	3,045.3	5,660.7	6,730.2
Total trade	7,892.9	10,991.7	16,604.7	19,920.8	23,860.2
Share of mineral fuel and oil products in total trade	0.11	0.20	0.18	0.28	0.28

Source: Computed from data provided by IE, Singapore.

The flow of mineral fuel and oil products has increased on both sides. This is evident from the steady rise in export of such products from Singapore to India and vice-versa. Singapore's domestic export of mineral fuel and oil products to India has increased by more than 11 times from S\$123.2 million in 2003 to S\$1.4 billion in 2007 (Table 2A). The rise has been particularly sharp from 2005 onward.

Along with exports, Singapore's re-exports of these products to India also display a similar upward trajectory (Table 2A). Value-wise, however, Singapore's mineral fuel and oil exports to India have been consistently higher than re-exports. Furthermore, the growing importance of these products in Singapore's exports and re-exports to India is evident from their rising shares in total exports and re-exports respectively (Table 2B). These shares, which were as less as five percent and one percent respectively (in current S\$ terms) in 2003, have expanded to as much as 23 percent and 11 percent in 2007.

³ The focus of the paper is on energy-intensive commodities. The present analysis does not pertain to trade in energy services.

⁴ These products are covered in Chapter 27 of the Harmonized System (HS) of trade classification.

Table 2A: Singapore and India: Balance of Mineral fuel and oil Trade (in S\$ million)

	2003	2004	2005	2006	2007
1. Singapore's domestic exports	123.2	165.9	928.2	808.5	1,406.2
2. Singapore's re-exports	20.8	41.8	312.4	622.4	931.4
3. India's exports	747.6	2,016.1	1,804.7	4,229.8	4,392.7
4. Singapore's exports +re-exports(1+2)	144.0	207.7	1,240.6	1,430.9	2,337.5
5. Trade Balance(4-3)	-603.6	-1,808.3	-564.0	-2,798.9	-2,055.2
6. Trade Balance(without re-exports)(3-1)	-624.4	-1,850.2	-876.4	-3,421.3	-2,986.5

Source: Computed from data provided by IE, Singapore

Table 2B: Singapore and India: Shares of Mineral fuel and oil Products in Exports & re-exports

Share in Singapore's exports	0.05	0.05	0.20	0.16	0.23
Share in Singapore's re-exports	0.01	0.01	0.06	0.09	0.11
Share in India's exports	0.30	0.43	0.27	0.55	0.50

Source: Computed from data provided by IE, Singapore

Table 2A shows that Singapore has a deficit balance of trade with India in mineral fuel and oil products. This implies that India is a net exporter of these products to Singapore. India's mineral fuel and oil exports to Singapore crossed S\$4 billion in 2006 (Table 2A). During the period 2003 to 2007, India's mineral fuel and oil exports have experienced a 5.9 times increase from S\$747.6 million to S\$4.4 billion. At their current level, India's exports to Singapore are more than three times Singapore's exports to India.

During the period of our study, the mineral fuel and oil trade balance, despite remaining in India's favor has shown a fluctuating trend. On the whole, from a surplus of S\$603.6 million in 2003 (including re-exports),⁵ the trade balance has increased to more than S\$2 billion in 2007. This, however, should not suppress the observation that, in 2006, the inclusive trade surplus had increased to S\$2.8 billion. Similarly, excluding re-exports, the trade balance was almost S\$3 billion in 2007, which was at an even higher level of S\$3.4 billion in 2007 (Table 2A).

The growing imbalance in mineral fuel and oil trade underlines persistence of higher mineral exports from India to Singapore vis-à-vis such exports from Singapore to India. These products clearly dominate India's merchandise exports to Singapore and they currently contribute half of total Indian exports (Table 2B). The corresponding shares are much lower for Singapore. However, as mentioned earlier, from the year 2005 there is an uptick in the trajectory of Singapore's mineral fuel and oil exports (and re-exports) to India as reflected by the higher shares. But these increases in shares for Singapore's mineral fuel and oil products

⁵ A (-) balance in Table 2a in rows 4 and 5 indicate a trade deficit for Singapore and an equivalent trade surplus for India.

have been accompanied by more than equivalent increases in India's mineral as well resulting in a widening of the trade gap.

II. Singapore's Mineral Fuel and Oil Exports to India

Ten major product categories (at the 4-digit level of ITC-HS product classification) figure in Singapore's mineral fuel and oil exports to India. A time-series of exports of these products for the period 2003 to 2007 is in Annexure 1A. Though trade is observed for 10 broad groups, the data points to the dominance of three categories among them. These are oil and coal tar distillates (2707), refined petroleum products (2710), and petroleum gas and hydrocarbons (2711).⁶ During the last five years, these three groups are seen to have accounted for more than 99 percent (value-wise) of Singapore's mineral fuel and oil exports to India.

Out of the three groups mentioned above, refined petroleum products stand out as the most significant export category. The share of this group in Singapore's mineral fuel and oil exports to India has increased from 80.4 percent to 97 percent during the period of study. The rise in share of refined products has been accompanied by corresponding reductions in shares of oil and coal distillates, and petroleum gas and hydrocarbons. The shares of the latter groups have dropped from 4.9 percent and 14.6 percent respectively in 2003 to 1.5 percent and 1.4 percent respectively in 2007. Thus, the higher exports of refined petroleum products have had a clear 'substitution/ displacement effect'⁷ in terms of steady erosion of the relative importance of oil distillates and petroleum gas in Singapore's mineral fuel and oil export basket for India.

Oil and coal tar distillate exports have increased from S\$6 million in 2003 to S\$21.4 million in 2007 (Annexure 1A). This increase has come almost entirely from other aromatic hydrocarbon mixtures (27075000).⁸ Aromatic hydrocarbon mixtures comprise the bulk of Singapore's oil and coal tar distillate exports to India. In 2007, such exports were as much as S\$21.3 million out of total oil and coal distillate exports of S\$21.4 million. Apart from hydrocarbon mixtures, exports of some other oils and distillates of coal tar at high temperature (27079990) also show an increasing trend. At the same time, exports of light distillates like benzene, toluene and xylene have virtually dried up in the last two years.

Unlike oil distillate exports, which have been driven principally by aromatic hydrocarbon mixtures, two items have been pushing petroleum gas and hydrocarbon exports. These are liquefied butanes (27111300) and other liquefied petroleum gases (27111900). Though butane exports used to be higher than petroleum gas exports, over time, the former has been overtaken by the latter. In 2007, there were some exports of propane (27111200), liquefied ethylene (27111410) and natural gas (27112100) as well.

Singapore's mineral fuel and oil exports are heavily dominated by refined petroleum products. Trade records show exports of more than 20 such items. These are shown in detail in Annexure 1B. As Annexure 1B shows further, five specific products between them are found to account for more than 90 percent of refined petroleum exports. These are aviation

⁶ The figures in parentheses represent the 4-digit product codes according to the commodity classification.

⁷ The 'substitution/displacement effect' does not imply that exports of a particular product are being substituted by another. The effect refers to substitution of shares or displacement (change) in relative shares. The terms substitution and displacement have been used in an interchangeable manner here.

⁸ The 8-digit figures in parentheses are the specific items comprising the broader 4-digit groups.

turbine fuel (ATF – 27101913); kerosene (27101916), lubricating oil with petroleum base stock (27101941); high speed diesel (HSD – 27101971); and other fuel oils (2710 1979).

There are no records of ATF exports in 2003 and 2004 (Annexure 1B). However, since 2005, ATF exports are seen to have accelerated rapidly. In 2007, ATF exports amounted to S\$562.6 million displacing kerosene as the most high-value item in Singapore's export basket. In the same year, ATF exports had a share of 41.3 percent in total refined petroleum exports, followed by kerosene (18.5 percent), HSD (14.5 percent), other fuel oil (10.3 percent) and lubricating oil (10.1 percent). Kerosene exports stood at S\$252.2 million in 2007 – a marginal drop from the high of S\$290.2 million in 2005 (Annexure 1B). During 2003 to 2007, HSD exports grew rapidly from only S\$0.24 million in the beginning of the period to S\$197.3 million in 2007. Exports of other fuel oils reached S\$141.2 million in 2007 from S\$4.3 million in 2003. Similarly, lubricating oil exports more than doubled to S\$138.1 million in 2007 from S\$66.2 million in 2003 (Annexure 1B).

We saw a displacement effect operating at the broad 4-digit level in favour of refined petroleum products. Within refined petroleum products, we now notice further such effects. The surge in ATF and HSD exports has altered the relative significance of items within the refined basket. The importance of lubricating oils and aromatic solvents has gone down in favour of ATF and HSD. However, kerosene continues to remain a major export from Singapore to India.

III. Singapore's Mineral Fuel and Oil Re-exports to India

All product groups figuring in Singapore's mineral exports to India feature in its re-exports as well. The only exception is coal and lignite distillates (2706) (Annexure 2A).

Singapore's mineral fuel and oil re-exports to India are also heavily dominated by refined petroleum products (2710). Refined petroleum re-exports amounted to S\$930.9 million in 2007, out of total mineral fuel and oil re-exports of S\$931.4 million (Annexure 2A). Thus refined products contributed more than 99 percent of mineral fuel and oil re-exports in 2007. This represents a further increase in the share of such products in mineral fuel and oil re-exports from 96.9 percent in 2003.

The structural composition of refined petroleum product re-exports is similar to that of exports. Annexure 2B shows the time series of re-exports of individual refined items during 2003 to 2007. Six products combined to contribute more than 98 percent of re-exports in 2007. These were HSD (42.3 percent), ATF (33.3 percent), refined unleaded motor spirit (27101116 – 8.0 percent), kerosene (7.8 percent), other fuel oils (5.3 percent) and lubricating oil with petroleum base stock (1.5 percent). An interesting feature was HSD re-exports in 2007 (S\$394.2 million), which were more than double of such exports in the same year. This is an important example of re-exports of a refined petroleum product exceeding its exports. Another such example is unleaded refined motor spirit. Motor spirit re-exports were nil during 2003 and 2004 and have picked up rapidly from 2005. The surge in HSD and ATF re-exports, similar to that in their exports, has increased their relative significance in the refined petroleum re-export basket. This has happened at the expense of low aromatic solvents (27101150) and solvent spirits (27101160), whose relative shares have declined. Thus, Singapore's re-exports of refined petroleum products have also experienced the same substitution effects as its exports.

The displacement effect is again visible at the broad 4-digit level. The overall increase in re-export of refined petroleum products has led to lower shares and significance of other commodities in the mineral fuel and oil re-export basket. This is particularly noticeable for oil and coal tar distillates and petroleum jelly and mineral wax. Re-exports of the former slumped to S\$0.2 million in 2007 from S\$1.3 million in 2005 (Annexure 2A). This was mainly on account of decline in re-exports of aromatic hydrocarbon mixtures. Petroleum jelly and mineral wax show a different trend. These re-exports dropped to only S\$81,436 in 2005 from S\$0.52 million in 2003 but partially recovered during 2006 and 2007 (Annexure 2A).

IV. India's Mineral Fuel and Oil Exports to Singapore

A time-series of India's mineral fuel and oil exports at the 4-digit level is given in Annexure 3A. A look at the data reveals that the commodity composition of India's mineral exports to Singapore is strikingly similar to Singapore's mineral exports and re-exports to India.

Indian exports almost entirely comprise refined petroleum oil products (2710). During the period 2003-2007, refined petroleum products, on an average, accounted for 99.5 percent of annual mineral fuel and oil exports. These exports were as much as S\$438.2 billion in 2007 out of total mineral fuel and oil exports of S\$439.3 billion in the same year (Annexure 3A). The remaining exports were of oil and coal tar distillates (2707) and petroleum jelly and mineral wax (2712). These products also show a rising export trend (Annexure 3A). But the much faster growth in refined petroleum product exports has led to oil distillates and petroleum jelly occupying lower shares in the export basket. The combined share of the latter in 2007 was only 0.2 percent of total mineral fuel and oil exports. Thus, as seen in Singapore's exports and re-exports, we see the substitution effect operating in favor of refined petroleum products in India's export basket as well.

Five items dominate India's refined petroleum exports (Annexure 3B). These include other fuel oil (27101979), naphtha reformates (27101170), refined unleaded motor spirit (27101116), HSD and ATF. These five items accounted for an annual average share of 97.9 percent of refined petroleum exports during 2003-2007. The relative contributions of these items in total refined exports, however, have changed during the period of study. HSD had the highest share (30.7 percent) in 2003. Though HSD exports have increased from S\$225.3 million in 2003 to S\$530.6 million in 2007 (Annexure 3B), their share in refined petroleum exports has declined to 12.1 percent in 2007. A similar decline is noticed for ATF. Despite ATF exports increasing from S\$128.8 million in 2003 to S\$368.5 million in 2007, their share has dropped from 17.5 percent to 8.4 percent during the period.

The decline in importance of HSD and ATF has been accompanied by higher importance of other fuel oil, naphtha and refined motor spirit. Shares of these products in aggregate refined petroleum exports have increased from 26.0 percent, 17.1 percent and 8.6 percent respectively in 2003 to 28.8 percent, 26.1 percent and 22.6 percent respectively in 2007. Other fuel oil exports have increased by 6.6 times from S\$190.7 million in 2003 to S\$1.3 billion in 2007 (Annexure 3B). During this period, naphtha exports have increased by 9.1 times from S\$125.5 million to S\$1.1 billion (Annexure 3B). But the largest increase has taken place for refined motor spirit. These exports have gone up 15.7 times to S\$991.7 million in 2007 from S\$63.2 million in 2003 (Annexure 3B).

A comparison of export trends of specific refined items shows a different direction in the operation of substitution effect between Singapore and India. In Singapore's case, the

substitution effect has worked in favour of HSD and ATF leading to higher shares of these products in refined exports. But in India's case, the effect seems to be working in an opposite direction with shares of motor spirit and naphtha increasing more than HSD and ATF in total refined exports.

Other oil and high temperature distillate products (27079990) were the main drivers of India's oil and coal tar distillate exports to Singapore during 2003 to 2005. Since 2006, such exports have declined. There has been a sharp pick-up in exports of light distillates like xylene and benzene during 2006 and 2007 that have augmented overall distillate exports. Petroleum jelly and mineral wax exports have shown a fluctuating trend during 2003 to 2007(Annexure 3A). Paraffin and other wax exports have picked up in recent years leading to an overall increase of these exports during the period of study.

V. Analytical Observations and Conclusion

Trade between India and Singapore in mineral fuel and oil products has expanded rapidly in recent times. Such trade currently occupies almost a third of total bilateral trade. An examination of the movement in goods shows that India is a net exporter of mineral fuel and oil products to Singapore. The balance of such trade during the period of this study (2003-2007) has tilted further in India's favour. This is on account of India's mineral fuel and oil exports to Singapore increasing faster than Singapore's exports (and re-exports) to India. Maintenance of this trend will lead to a further improvement of the mineral fuel and oil trade balance in India's favour.

A striking feature of the mineral trade is the structural similarities in exports between both sides. Exports on both sides are heavily dominated by refined petroleum products. The share of these products in bilateral mineral fuel and oil trade has increased from 95.8 percent in 2003 to 99.2 percent in 2007. During the same period, share of refined petroleum products in total bilateral trade has gone up from 10.8 percent to almost 28 percent. This implies that not only are refined products driving mineral fuel and oil trade, they are also key drivers of overall bilateral trade.

Within the broad category of refined petroleum products, ATF, kerosene, lubricating oil with petroleum base stock, HSD and other fuel oils are Singapore's main exports to India. All these and refined unleaded motor spirit are leading re-exports to India as well. The importance of ATF and HSD in Singapore's exports and re-exports has gone up considerably in more recent years of the period under study. These products have benefited from a favorable substitution effect. On the other hand, HSD and ATF also feature among India's main refined petroleum product exports to Singapore. However, though the exports of these products are increasing, they are not increasing as fast as those of other fuel oil, naphtha and refined motor spirit. Thus in India's export basket, these products are experiencing a relative decline in significance out of a substitution effect working against them. In this regard, it must be mentioned that kerosene and naphtha are two distinct products in bilateral trade in refined products. Unlike ATF and HSD, which are common leading exports, kerosene and naphtha are distinct leading exports for Singapore and India respectively.

The role of refined petroleum products in India-Singapore trade needs to be looked at in the context of the increasing importance of such products in India's export basket. Refined petroleum products have come to occupy a key position in India's overall merchandise exports. The share of refined products in exports has increased to 17.4 percent in 2007-08

from only 4.9 percent in 2002-03. These products now have the second largest share in India's exports after engineering goods (20.7 percent). One of the main reasons behind the rise in petroleum exports is the large capacity built up by India's refineries and its efficient utilisation. The capacity augmentation has taken place in both public and private segments of India's petroleum industry. As on April 1, 2008, India's aggregate installed refining capacity was 149 million tonnes. Around 70.8 percent of the installed capacity rests with state-owned corporations and the remaining in private corporations⁹. Furthermore, since 2006-07, India's refining industry has been utilising more than 100 percent of its installed capacity. Indeed, the state-owned Hindustan Petroleum Corporation Ltd (HPCL) and the largest private refinery – Reliance Petrochemicals Ltd (RPL) – crossed 100 percent capacity in 2004-05 only. The upshot of the efficiency in capacity utilisation has been a sharp increase in the outflow of refined petroleum products. This has led to a steep rise in refined petroleum exports from India which has got reflected in the increase in such exports to Singapore as well. Singapore is now the second largest destination for India's petroleum product exports after the United Arab Emirates (UAE). In 2007-08, Singapore accounted for 14.1 percent of India's petroleum exports, while the UAE absorbed 15.9 percent.

Our analysis shows that specific refined products such as HSD, naphtha, refined motor spirit and ATF have experienced sharp increase in exports in recent years. All these are India's leading exports to Singapore. It is important to examine why these products have emerged as the key refined product exports. At the same time, it's also important to analyse why some of these 'export' items (for example, ATF, HSD and fuel oils) are being imported by India from Singapore in large amounts. It is mentionable in this regard that refined petroleum products did not figure in the Early Harvest Programme (EHP) of the CECA.¹⁰ So reduction in tariffs has not been a determinant of higher imports of these products by India.

The apparent paradox of India exporting to Singapore some of the refined petroleum products that it imports from it can be partially explained by the complex market forces operating in India's domestic petroleum market. The addition of fresh capacity in India's refining industry and its efficient utilisation has not been accompanied by evolution of an appropriate incentive structure for private refiners. State-owned marketing companies have more than 80 percent share in domestic sales of refined petroleum products¹¹. Retail prices of products sold by these companies do not change automatically along with changes in global mineral fuel and oil prices. In recent years there have been several examples of state-owned corporations not increasing retail prices despite hardening of global crude prices. While such moves have been justified on grounds of tackling inflation, private refiners have been at a disadvantage vis-à-vis their public counterparts. These difficulties have resulted in diversion of significant output in form of refined motor spirit, fuel oils, HSD, ATF and naphtha (meant for petrochemical complexes) from private refineries to global markets. Within the above, the offloading of motor spirit and fuel oils has been relatively more explaining the increasing share of these in refined exports vis-à-vis HSD and ATF. Exports of privately refined products, particularly fuel oil have also gone up with Essar Oil's new refinery commencing production¹². As far as direction of these exports in specific overseas markets are concerned, lower shipping costs

⁹ See <http://petroleum.nic.in/petstat.pdf> accessed on September 25, 2008.

¹⁰ The EHP is a part of Annex 2A of the CECA Agreement. It put down a list of 506 items originating from Singapore on which the customs duties were to be eliminated and the goods allowed duty-free entry into India from 1 August 2005.

¹¹ As in 8 above.

¹² Verma, N. (2008), 'India Power Woes, Pricing Trigger Diesel Use Surge', *Thomson Reuters Energy Weekly*, 11-15 August 2008.

and the scope of reaching out to the greater Southeast Asian region have made Singapore an ideal destination for private refinery exports.

A robust domestic industry driven by a rejuvenated manufacturing and an upsurge in automobile sales has increased the domestic demand for HSD and refined motor spirit in India. The demand for diesel has also gone up as both industrial and domestic consumers have been trying to overcome occasional power shortages by using diesel generators.¹³ Competition in aviation services and increase in air travel has also boosted demand for ATF. The output from state-owned refineries has not been sufficient for meeting this higher demand. The demand-supply gap has increased further with part of private refined output getting diverted to global markets. The obvious result has been an increase in ATF, HSD, refined motor spirit and fuel oil imports by India's public sector oil firms from different countries including Singapore. The greater slant of India's public refineries towards diesel, petrol and liquefied petroleum gas has also prevented the augmentation of kerosene supplies necessitating such imports. The efficiency of Singapore as a transshipment hub has encouraged considerable re-exports of these products that are actually refined in other countries. These trends are likely to strengthen if India's current domestic market dynamics remain unchanged.

¹³ As in 11 above.

Annexure 1A: Singapore's Mineral Fuel & Oil Exports to India (2003-2007) (in S\$)

Code	Description	2003	2004	2005	2006	2007
2701	Coal & coal fuels	35	0	0	0	0
2705	Coal & water gas	0	0	98	0	0
2706	Coal, lignite & peat tar distillates	0	0	0	2,706	14,080
2707	Oil & coal tar distillates	6,034,935	7,478,834	6,541,395	9,974,195	21,724,192
2710	Refined petroleum oil & products	99,091,649	15,537,787	911,222,670	761,567,896	1,363,680,052
2711	Petroleum gas & hydrocarbons	18,019,759	2,151,275	8,622,681	36,255,368	19,089,299
2712	Petroleum jelly & mineral wax	41,410	420	35,677	41,381	108,282
2713		0	1,121,285	1,715,834	27,774	1,816,975
2714	Bitumen & asphalt	11,656	0	87,097	24,495	0
2715		8,207	1,315	13,234	546,388	0
	Total	123,207,651	165,890,916	928,238,686	808,440,203	1,406,133,270

Source: Compiled from data provided by IE Singapore

**Annexure 1B: Singapore's exports of refined petroleum products to India (2003-2007)
(in S\$)**

Code	Description	2003	2004	2005	2006	2007
27101116	Other motor spirit refined unleaded			177,189,504	21,581,570	15,625,508
27101120	Aviation spirit			2,463		
27101140	White Spirit					345,027
27101150	Low aromatic solvents	8,661,295	10,934,360	15,803,876	20,249,007	20,384,184
27101160	Other solvent spirits	52,947	450,220	7,350	32	3,092,118
27101170	Naptha reformat		17,341,920	0		
27101190	Other light oils	275,983	229,591		345,919	1
27101913	ATF (flashpoint 23 degree C or more)	0		143,178,446	116,287,231	562,635,129
27101914	ATF (flashpoint 23 degree C or more)	0		0	80,832	16,037,562
27101916	Kerosene	7,255,198	0	290,027,779	259,976,388	252,194,053
27101919	Other medium oils		2,551,931	4,226,913	5,945,775	5,998,119
27101930	Carbon black feedstock		3,715,725	153,849		
27101941	Lubricating oil base stock	66,154,812	110,915,732	133,718,752	147,616,309	138,053,439
27101942	Lubricating oil with 70% petroleum	634,149	69,111	126,030	259,607	489,619
27101943	Other lubricating oil	10,370,368	4,770,111	5,620,378	6,065,699	5,667,885
27101944	Lubricating greases	485,679	790,173	892,637	186,305	431,427
27101950	Hydraulic brake fluid	332,659	317,006	734,660	466,041	1,211,130
27101960	Oil for transformer	20,580		375,859	176,925	38,700
27101971	HSD (gas oil)	248,130	843,915	137,486,831	94,135,051	197,262,597
27101972	Other diesel fuel		2			
27101979	Other fuel oil	4,309,073	1,785,401		85,238,419	141,107,577
27101990	Other petroleum product	290,776	422,589	1,677,343	2,956,786	3,105,977
2710		99,091,649	155,137,787	911,222,670	761,567,896	1,363,680,052

Source: Compiled from data provided by IE Singapore

Annexure 2A: Singapore's Mineral Fuel & Oil Re-Exports to India (2003-2007) (in S\$)

Code	Description	2003	2004	2005	2006	2007
2701	Coal & coal fuels	2,084	0	0	1,,809	0
2705	Coal & water gas	0	1,193	102	0	0
2707	Oil & coal tar distillates	9,984	365,117	1,265,434	1,025,066	167,965
2709	Crude petroleum oil	0	0	0	150	0
2710	Refined petroleum oil & products	2,01,645,889	41,341,594	31,101,6865	621,144,428	930,948,028
2711	Petroleum gas & hydrocarbons	2,213	26,629	12,472	3,494	5,078
2712	Petroleum jelly & mineral wax	516,953	97,219	81436	117,821	184,607
2714	Bitumen & asphalt	0	4,198	22,176	79,985	48,496
2715		97,619	0	0	51,919	0
	Total	20,793,742	41,836,750	312,398,485	622,424,672	931,354,174

Source: Compiled from data provided by IE Singapore

Annexure 2B: Singapore's re-exports of refined petroleum products to India (2003-2007) (in S\$)

Code	Description	2003	2004	2005	2006	2007
27101116	Other motor spirit refined unleaded			25,014,541	61,143,128	74,062,480
27101150	Low aromatic solvents	662,407	563,978	1,727,064	569,860	319,581
27101160	Other solvent spirits		863,918	1,525,611	6,197,230	5,889,908
27101170	Naptha reformat		109			230
27101190	Other light oils		3,102	3,281	12,600	961
27101913	ATF (flashpoint 23 degree C or more)	0		116,840,660	287,979,184	310,452,301
27101914	ATF (flashpoint 23 degree C or more)	13,910	1,509	18,212	22,721	
27101916	Kerosene			42,195,787	172,187,933	72,233,730
27101919	Other medium oils	633	329,043		911,374	2,808,477
27101930	Carbon black feedstock					217
27101941	Lubricating oil base stock	931,806	474,861	7,184,802	9,162,358	13,792,142
27101942	Lubricating oil with 70% petroleum	211,230	504,996	32,525	115,815	4,058,735
27101943	Other lubricating oil	1,940,987	2,981,275	2,562,404	2,349,792	1,177,633
27101944	Lubricating greases	354,326	614,595	865,991	1,551,155	1,172,006
27101950	Hydraulic brake fluid	35,474	5,040	22,388	16,822	8,231
27101960	Oil for transformer	51,291	359,528	187,419	126,934	400,957
27101971	HSD (gas oil)	6,713,627	25,993,978	101,354,312	76,188,961	394,184,376
27101972	Other diesel fuel		0			30,222
27101979	Other fuel oil	9,194,438	6,659,020	6,596,095	473	49,424,037
27101990	Other petroleum product	54,760	1,986,642	4,885,773	2,608,088	931,804
		20,164,889	41,341,594	311,016,865	621,144,428	930,948,028

Source: Compiled from data provided by IE Singapore

Annexure 3A: India's Mineral Fuel & Oil Exports to Singapore (2003-2007) (in S\$)

Code	Description	2003	2004	2005	2006	2007
2701	Coal & coal fuels	0	1,212	0	1	0
2702	Lignite	6,629	76,597	21,629	2,003	2,581
2705	Coal & water gas	0	0	87	0	0
2707	coal tar oil & distillates	128,192	2,367,687	2,843,868	260,646	9,524,092
2709	Crude petroleum oil	12,063,853	9	0	9	2
2710	Refined petroleum oil & products	734,777,898	2,013,340,577	1,801,701,734	4,229,289,082	4,382,396,396
2711	Petroleum gas & hydrocarbons	57,079	98,347	17	0	0
2712	Petroleum jelly & mineral wax	575,159	186,781	115,508	200,236	778,040
2714	Bitumen & asphalt	0	0	0	1,967	0
	Total	747,608,810	2,016,071,210	1,804,682,843	4,229,753,944	4,392,701,111

Source: Compiled from data provided by IE Singapore

Annexure 3B: India's Refined Petroleum Exports to Singapore (2003-2007) (in S\$)

Code	Description	2003	2004	2005	2006	2007
27101111	Refined motor spirit	153				
27101112	Premium refined motor spirit		37,394,666	28,227,581	61,842,663	6,816,488
27101114	Refined regular motor spirit		31,754,780	0	57,125,070	70,584,541
27101116	Other motor spirit refined unleaded	63,159,273	216,768,572	168,850,507	337,062,202	991,966,448
27101160	Other solvent spirits			65,105		
27101170	Naptha reformat	125,460,153	545,201,261	547,834,832	947,653,955	1,145,087,969
27101190	Other light oils	19		74		374,658
27101913	ATF (flashpoint 23 degree C or more)	128,776,874	226,806,914	277,971,080	482,175,757	368,506,729
27101914	ATF (flashpoint 23 degree C or more)	16,469	17,175	0	22,045	
27101916	Kerosene	0	61	0		540
27101919	Other medium oils	511,447	239,375	378,305	572,930	471,075
27101930	Carbon black feedstock				2,128,210	220,532
27101941	Lubricating oil base stock		2,860		1,750	1,990,656
27101942	Lubricating oil with 70% petroleum	0			54,442	782
27101943	Other lubricating oil	17,011	72,958	10,196	117,664	153,676
27101944	Lubricating greases	24,197	39,441	22,958	20,674	42,859
27101960	Oil for transformer	13,459		34,796	41,008	60,087
27101971	HSD (gas oil)	225,319,993	449,757,684	272,560,122	1,016,739,453	530,587,042
27101972	Other diesel fuel		3,816,206		7	
27101979	Other fuel oil	190,737,768	501,258,934	505,668,065	1,321,035,636	1,262,180,980
27101990	Other petroleum product	741,082	209,690	78,113	2,695,616	3,351,334
		734,777,898	2,013,340,577	1,801,701,734	4,229,289,082	4,382,396,396

Source: Compiled from data provided by IE Singapore